

Transit Development Plan for the City of Lincoln

Prepared for

City of Lincoln, NE

Technical Memorandum #1 SOCIOECONOMIC and LAND USE CHARACTERISTICS

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1. Socioeconomic and Land Use Characteristics

Introduction

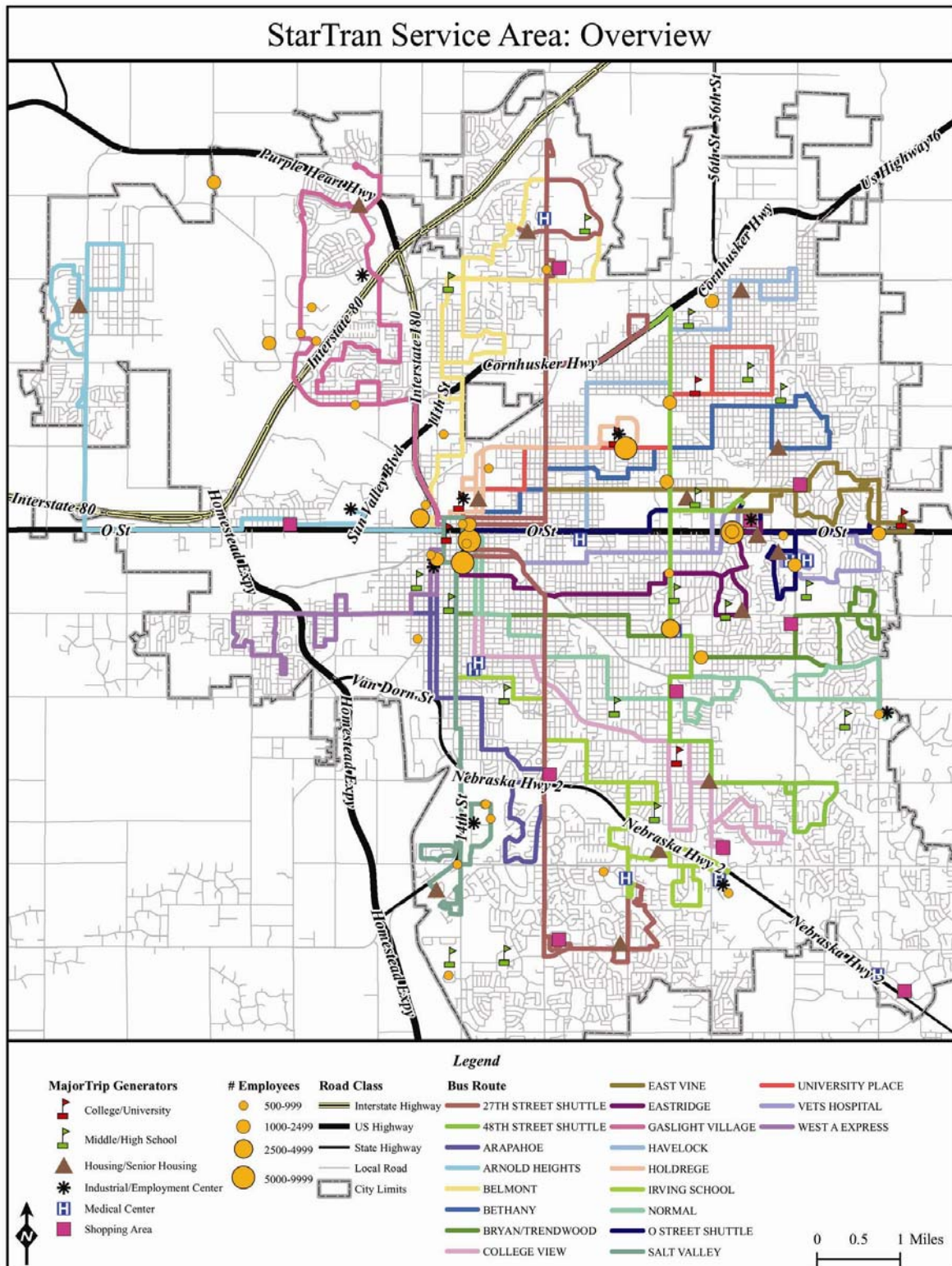
The City of Lincoln is located in southeast Nebraska in Lancaster County. The city is located approximately 50 miles southwest of Omaha via Interstate 80 and US Highway 77 in the Platte River Valley. Lincoln's population makes up 90% of the population in Lancaster County. Lincoln is both the capital of Nebraska and the government center for Lancaster County and is also the second largest metropolitan area in the state, second only to Omaha. StarTran is the City of Lincoln's transit provider and operates fixed route and Handi-Van service throughout the city. Figure 1-1 is an overview map of the StarTran service area.

Lincoln has an estimated population of 236,146 (2004 Census Bureau estimate) and is home to the University of Nebraska-Lincoln (UNL). For the 2005-2006 school year, UNL reported having 21,675 students and 7,503 employees (UNL 2005-2006 Factbook). The City of Lincoln and UNL are discussed separately in this chapter due to the different overall cultures between the two entities.

This chapter is split into seven topics with regard to the City of Lincoln: demographics, socioeconomics, the combination of the two into a potential for transit success scoring system, employment, commuting patterns, land use, future growth and development, and one section profiling the University of Nebraska-Lincoln. Past, present and future population statistics are discussed in the demographics section as are the concentrations of youth and senior populations in the region. In the socioeconomics section, income statistics, poverty, and households without vehicles are discussed. In the third section, demographic and socioeconomic characteristics that are generally considered to be correlated to transit are evaluated for the region in order to produce a map of areas of potential transit success. Jobs, major employers, and unemployment are discussed in the employment section and means of transportation to work and place of employment are discussed in the commuting section. In the land use section, both land use and the location of major trip generators are described. Future growth is discussed in terms of developer interest areas for 2006-2007 and the extent of future growth tiers. The final section on UNL describes both the student and employee populations.

This chapter provides an overview of socioeconomic, land use, and commuting characteristics based on data collected from the 2000 United States Census, the 2000 Census Transportation Planning Package, the United States Census Bureau, the City of Lincoln, the 2025 Lincoln City/Lancaster County Comprehensive Plan, and the University of Nebraska 2005-06 Factbook. Where maps are used to present data in a spatial manner, Census block groups are the unit of analysis.

Figure 1-1: StarTran Service Area Overview



City of Lincoln

Population – Past, Present, and Future

When looking at the demographics of an area, the current situation as well as the past and projected conditions must be studied. Why changes in transit service were made in the past and how transit needs to change in the future to meet changing demographics and demand can be better understood by looking at the patterns that emerge from such an analysis. The decennial Census provides a ‘snapshot’ of a region’s demographics, which is very useful to understanding the current needs of a population, but does not speak to how the region got to that snapshot or what the future is expected to bring.

According to Census 2000 information, the population of the City of Lincoln was 225,581. In 2004, the Census Bureau reports that the population was 236,146. From 1990-2000, Lincoln’s population grew by 17%, a rate much higher than the statewide figure of 8%. From 2000-2003, the Census Bureau reports that Lincoln’s population grew by 4.4%.

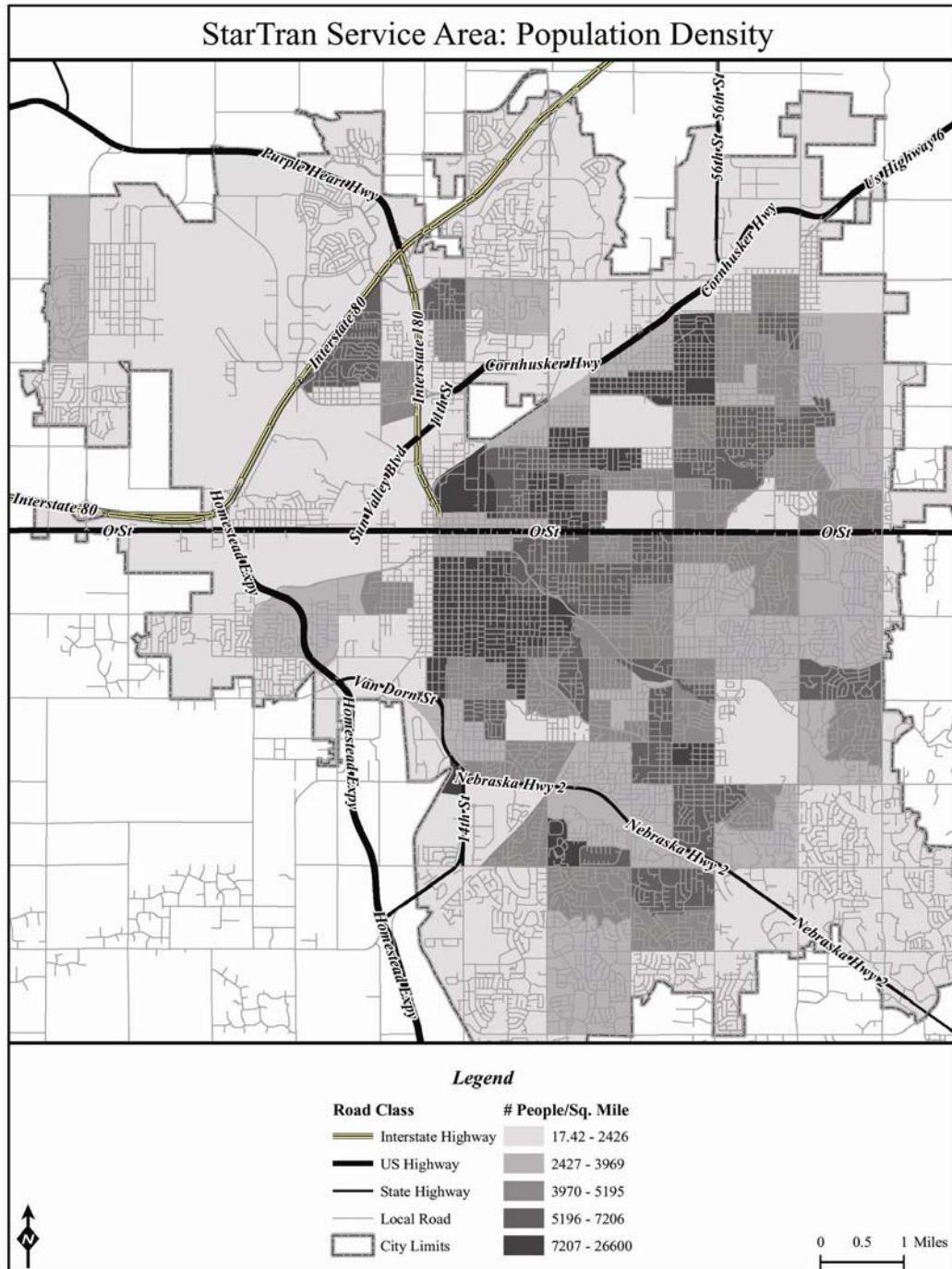
According to the 2025 Lincoln City/Lancaster County Comprehensive Plan, Lincoln’s population is projected to grow at a rate of 1.5% per year. This number is an estimate created by looking at the past trends in population growth for the City. From the 1960s to the 1990s, the average population growth rate per year was 1.2%. In the 1990s, the average growth rate per year was 1.6%. At the assumed 1.5% growth rate per year, Lincoln’s population is projected to reach 327,000 by 2025 and 475,000 by 2050. Looking at a more regional context, the Lincoln-Lancaster County and Omaha Planning Departments project a combined metropolitan population of approximately 1.5 million people by the year 2050.

Current Population Density

Population density is another important demographic measure because of its inherent ability to show concentrations of people across a landscape. Densities are very useful for their ability to show concentrations of people but can be misleading due to the composition of the landscape. People do not live in heavily forested areas, in wetlands or in lakes, but the area that is comprised of these types of land cover is not excluded when calculating the land area of the region. The figures presented here are general density figures because they use total land area per political designation, *not* only habitable land.

According to the 2025 Lincoln City/Lancaster County Comprehensive Plan, the population density in Lincoln has remained at approximately 3,000 people per square mile since 1970. The Plan also notes that there is sufficient developable land to allow for the density figure to remain the same during the Plan period despite projected growth in overall population. The Census Bureau reports that the population density in Lincoln for the year 2000 was 3,022 people per square mile. Figure 1-2 provides a picture of population density by Census block group for Census 2000 population figures.

Figure 1-2: Population Density



Population is concentrated in central eastern Lincoln between Cornhusker Highway and O Street and also in southeast Lincoln between O St. and Nebraska Highway 2. There are other smaller pockets of population near the intersection of Interstates 80 and 180 and just south of Nebraska Highway 2.

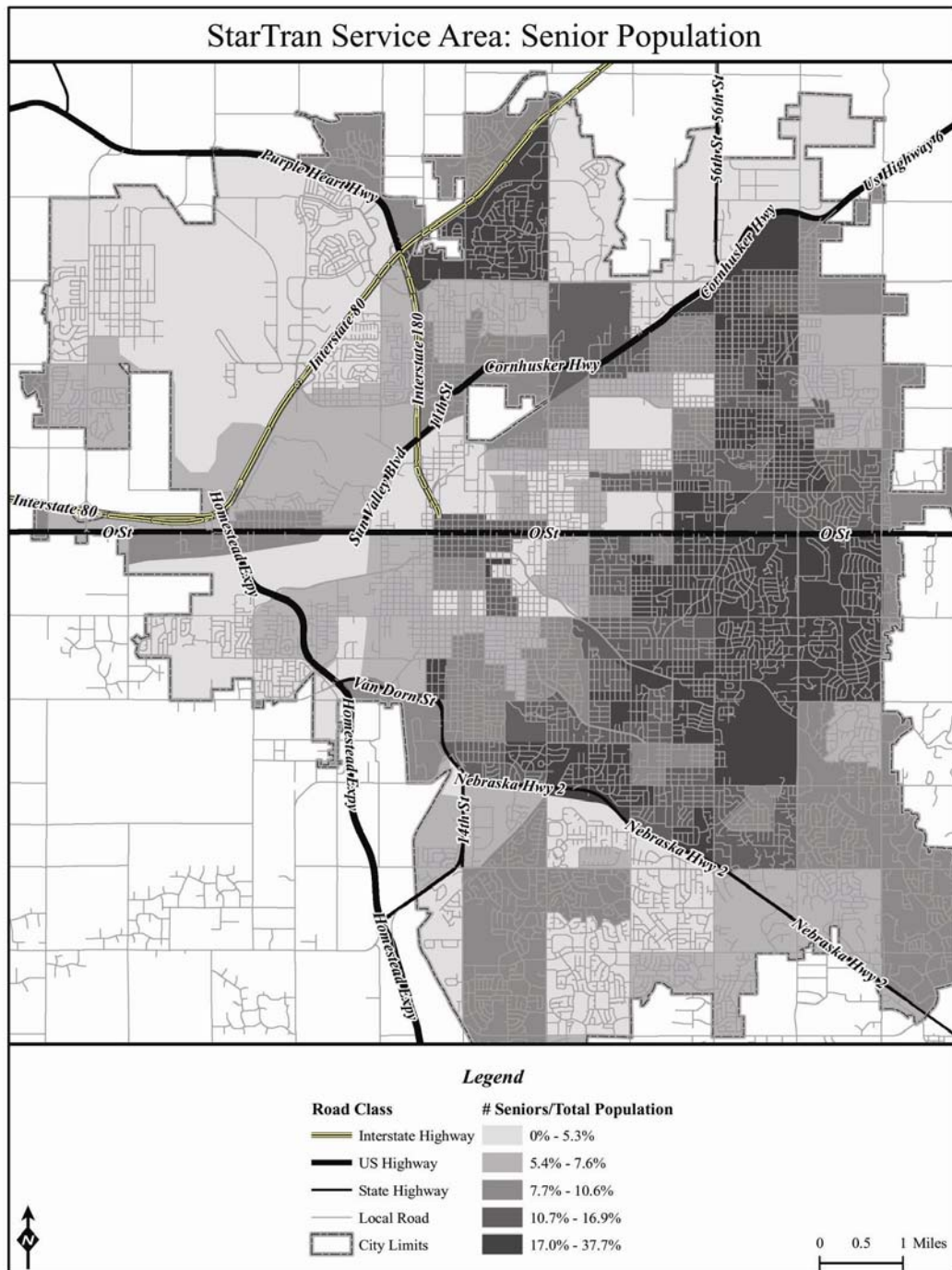
For the younger and older segments of the population, age directly impacts mobility, and thus impacts transit usage. Identifying where these populations are concentrated can indicate areas of potential transit demand. Until the age of 16 youth are ineligible to drive, making them dependent on others or on non-motorized modes, such as walking and biking, for their mobility. Once youth turn 16, limited incomes often restrict their ability to own and maintain a vehicle. Youth and senior populations are discussed in the following sections.

Senior Citizen Population

Senior citizens tend to locate in the more urban areas, where access to health and activities are readily available. According to Census 2000, of Lincoln's 225,581 people, 23,501 (10.4%) were aged 65 or over. Figure 1-3 is a map of senior citizens as a percentage of the total population by Census block group for the City of Lincoln.

Senior citizens are heavily concentrated in eastern Lincoln centered on O St. between Cornhusker Highway and Nebraska Highway 2. Another pocket of seniors is located just northeast of the intersection of Interstates 80 and 180.

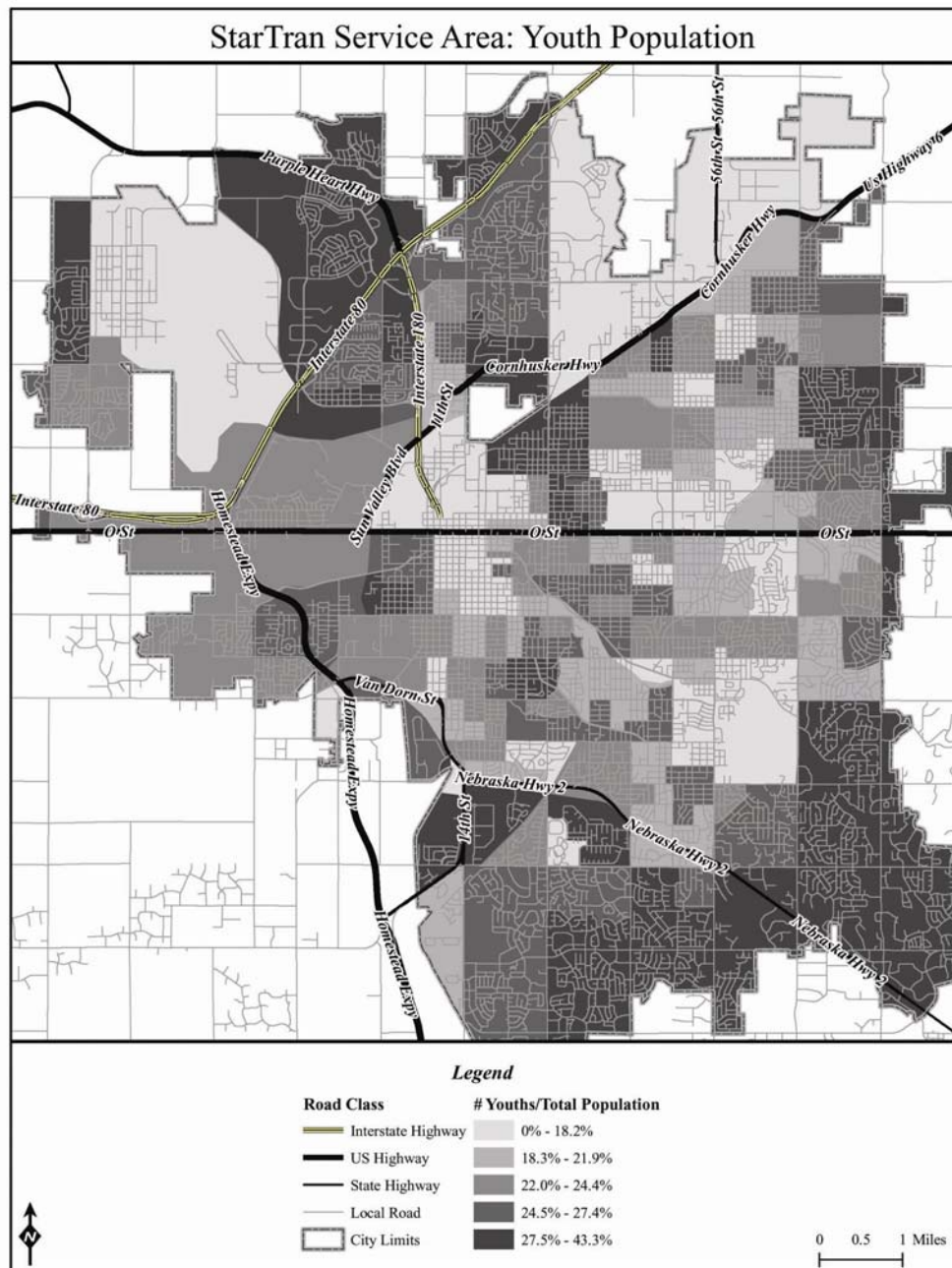
Figure 1-3: Senior Population



Youth Population

Youths for this discussion are considered to be any person under the age of 18. Figure 1-4 is a spatial view of the youth population in Lincoln. Lincoln is home to 51,906 people under 18 – 23% of the population. Youths are concentrated in northwest Lincoln around the Interstate 80/180 intersection and in southeast Lincoln around Nebraska Highway 2. College-age students at the UNL are discussed in the final section of this chapter.

Figure 1-4: Youth Population



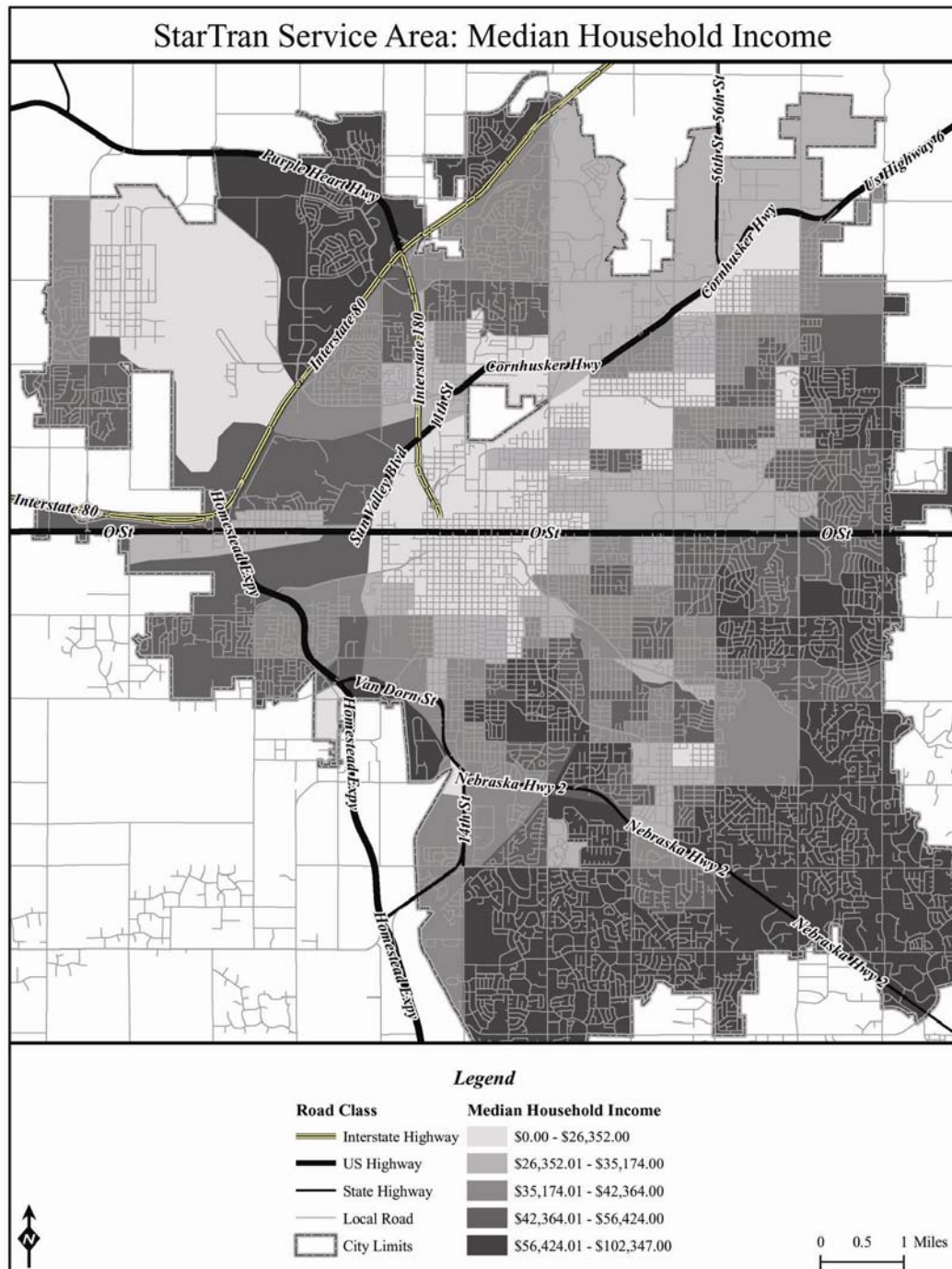
The following sections look at socioeconomic characteristics such as income and poverty. Employment and commuting statistics follow.

Income

Income determines (in part) the type of transportation that people are able to use to get to work. People with lower incomes are more likely to be in need of public transportation options than people with higher incomes who can afford private transportation. Both household income and individual income are discussed in this section.

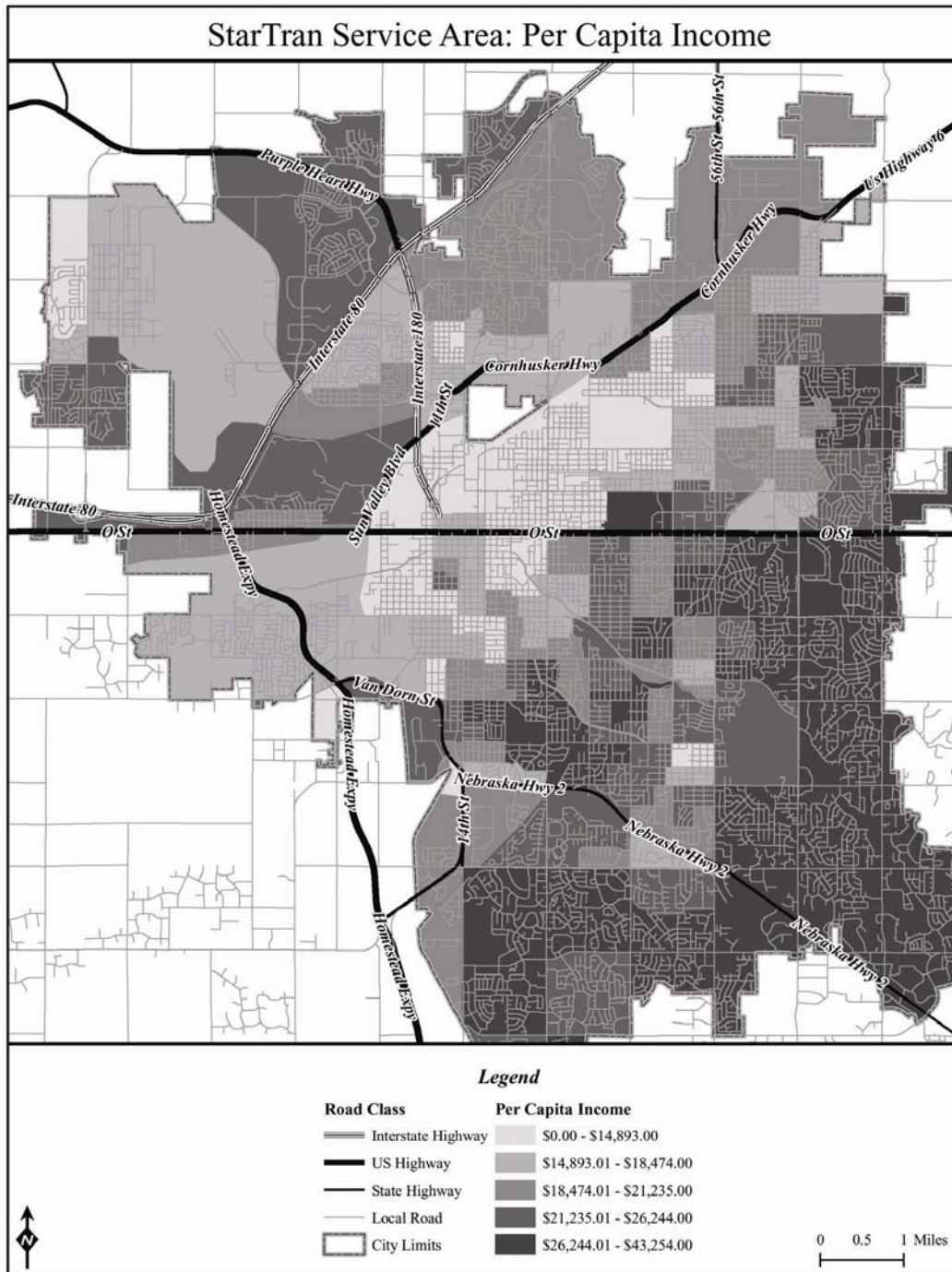
Median household income describes the average income of households within the study area. In Lincoln, the Census 2000 median household income was \$40,605. Median household income by block group for Census 2000 is mapped in Figure 1-5. In the City of Lincoln, wealth is concentrated around the edges of the City and low incomes are centered downtown. Wealth is particularly concentrated in the northwest and southeast corners of the city.

Figure 1-5: Median Household Income



Per capita income describes the average income of an individual living in the study area. The per capita income for Lincoln in 2000 was \$20,984. Figure 1-6 is a map of per capita income by Census 2000 block group. As can be expected, per capita wealth is concentrated in much the same way as the household statistic, in the northwest and southeast corners of Lincoln. Low personal incomes are also concentrated in the central city.

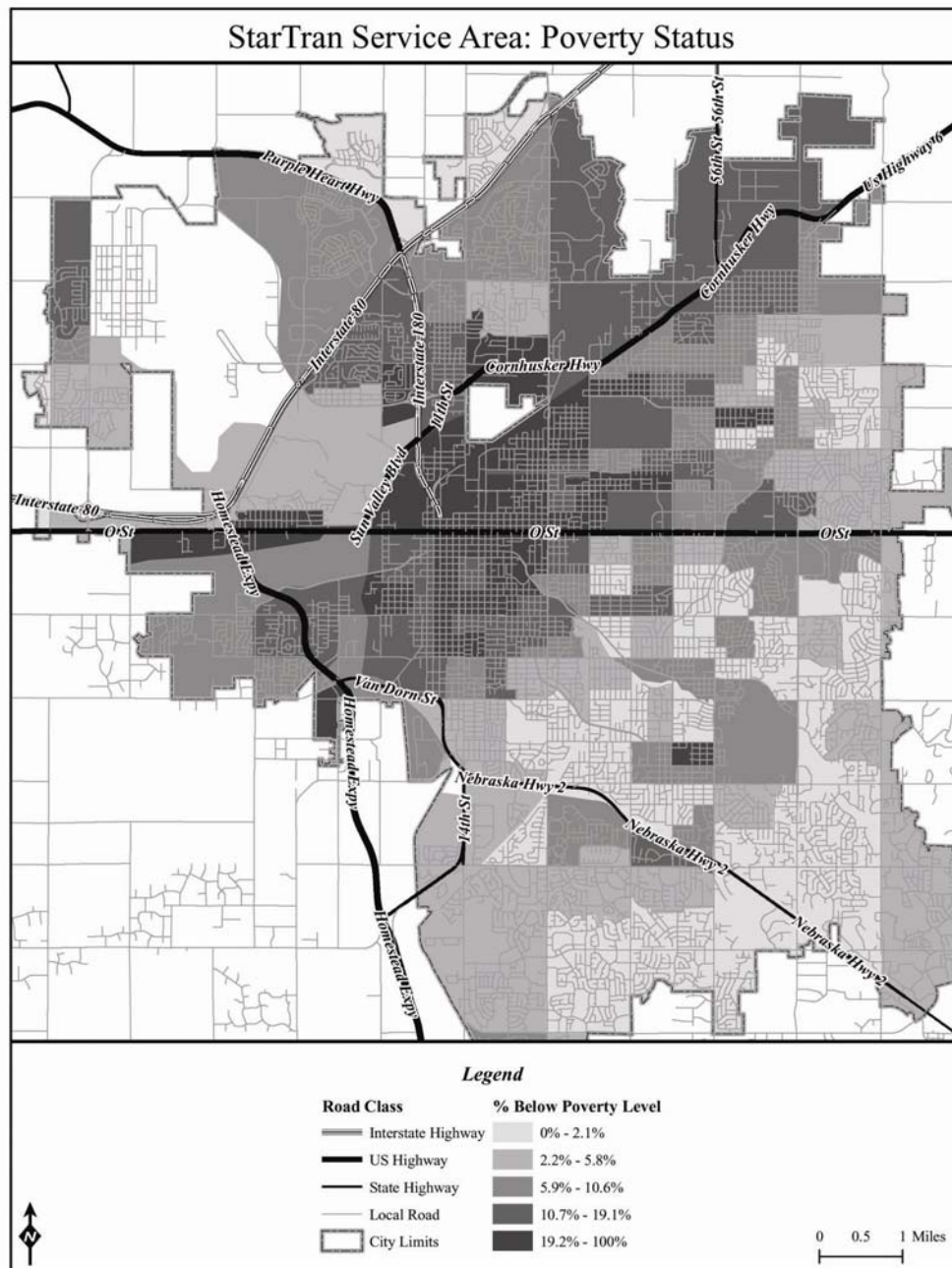
Figure 1-6: Per Capita Income



Population below the Poverty Level

Poverty is defined as an income level for individuals and families below which people are considered to be living in poverty. In 2000, 21,627 people were living below the poverty level – 10% of the population. Figure 1-7 looks at the percentage of the population living below the poverty level by Census 2000 block group. Poverty is concentrated in central Lincoln and in northeast Lincoln along Cornhusker Highway.

Figure 1-7: Poverty Status

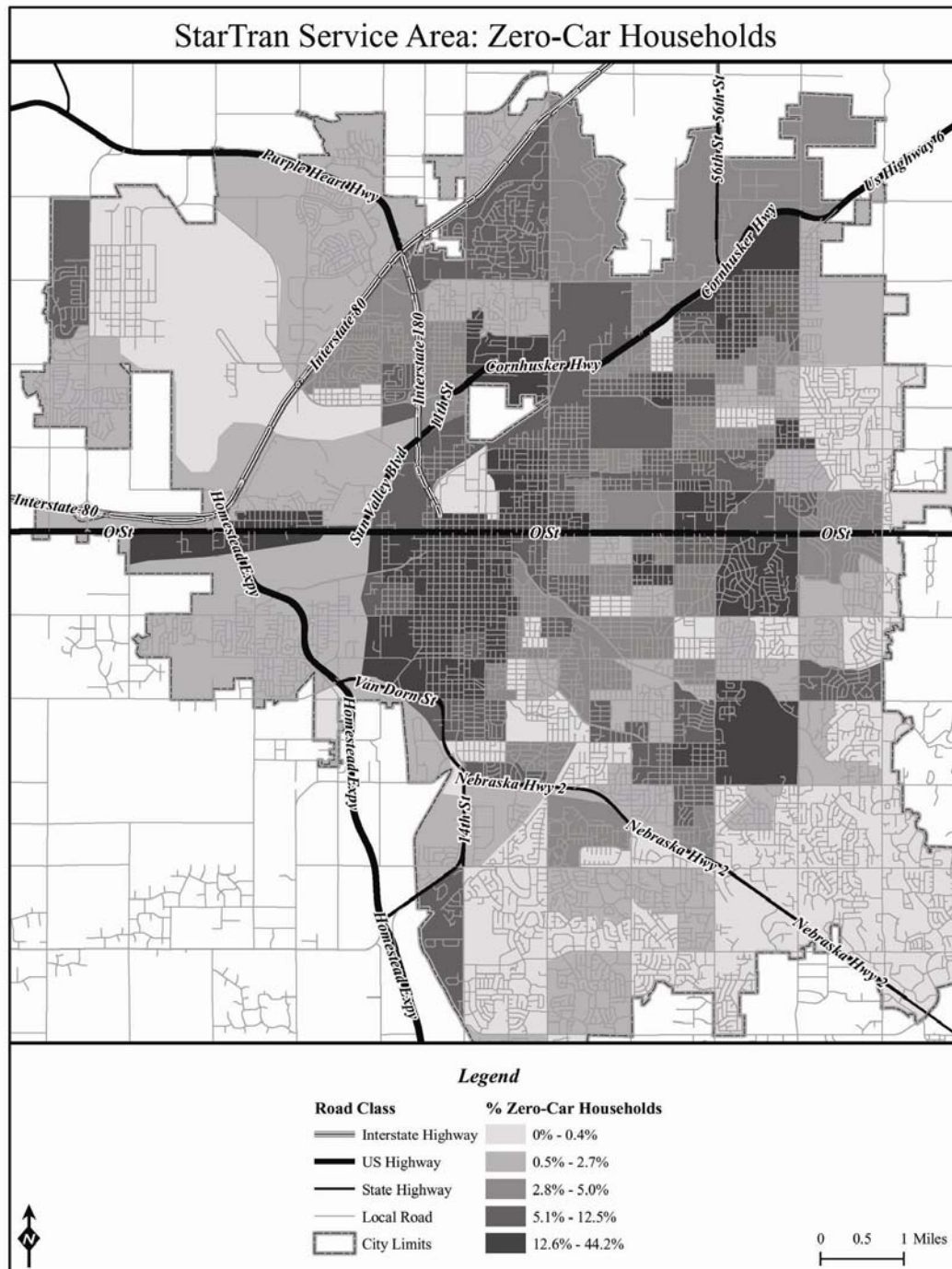


Natural and socioeconomic characteristics, such as age and income, are central in determining the location and level of service for bus routes, but other material and behavior characteristics, such as employment and commutation characteristics, are also essential. The next sections deal with the material and behavior characteristics of the people living in Lincoln as well as the cumulative transit success score.

Zero-Car Households

Numbers of cars per household is an important statistic to analyze because it describes transit dependence and in turn, transit demand in the region. Zero-car households are considered to be entirely dependent upon alternate transportation sources. In Lincoln, 6,618 households have no vehicles available – 7.3% of total households. Figure 1-8 provides a map of zero-car households as a percentage of total households by Census 2000 block group. Zero-car households are most prevalent in eastern Lincoln with a large pocket in the central city but do not follow any obvious spatial pattern.

Figure 1-8: Zero-Car Households



Transit Success Score

The ‘transit score’ map is created in order to spatially analyze several transit-oriented demographic and socioeconomic characteristics at the same time (the characteristics discussed individually in this chapter so far). The transit score is a relative measure of how successful a fixed route transit system is expected to be in a particular region. Used in conjunction with a congruency analysis of major transit generators, the transit score can be used to evaluate existing service as well as to identify areas of potential demand. Major employers and other trip generators are discussed in the following sections.

Demographic and socioeconomic information is collected from the US Census Bureau for a region divided into smaller geographic units such as tracts, block groups, or blocks. Block groups were used for this analysis. Transit-oriented variables used for the analysis include:

- Population Density
- Percentage of the Population under the age of 18
- Percentage of the Population over the age of 65
- Median Household Income
- Per Capita Income
- Percentage of the Population Living Below the Poverty Level
- Percentage of Zero-Car Households

Each of these variables has a strong correlation with transit success. Transit is most often successful in areas of high population density and in areas with high youth and senior populations. Transit is also traditionally successful in areas with low household and per capita income, high percentages of people living below the poverty level, and high percentages of households without vehicles available.

For a given region, the values for each of these variables are organized by geographic unit. For each variable, the values are arranged into categories of values using the quantile classification method of GIS analysis. For this analysis, all variables are divided into five classes. All of the values in each category (class) are then given a ‘score’ between 1 and 5, where 1 is low expectation of success and 5 is high expectation of success. Then, all of the scores are added up for each variable inside a geographic unit to give a total transit score. Seven variables are evaluated, so a score close to 35 means that a geographic unit has a high expectation for transit success; a score close to 7 means that there is low expectation for transit success. Transit scores are then mapped by geographic unit and quantile classification to show where demographic and socioeconomic variables lend themselves to potential transit success.

Figure 1-9 maps the probability of transit success for the City of Lincoln. The potential for transit success in Lincoln is centered along Cornhusker Highway, O St. and Van Dorn St./Nebraska Highway 2. StarTran routes currently serve the vast majority of areas with high potential for transit success. Only small portions of block groups with high transit success scores around Cornhusker Highway and 27th St., Cornhusker Highway and 70th St., Van Dorn St. and 7th St., Superior St. and 48th St. and the Capitol Parkway between D and L Sts. are not within walking distance (a quarter mile) of current StarTran routes.